DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 2, 8 and 13 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 2, 4 and 6-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rider (US5264795) in view of Meinke (US4193123), Hethuin (US5712639) and Hoshino (US5267033).

Regarding claim 2, Rider teaches a non-contacting system for transmission of digital signals between at least one first unit and at least one second unit wherein said first unit (100 of Figs. 5-6) comprises:

a data source for generating a serial data stream (145 of Fig. 6, column 9 lines 34-37);

a transmitter (100 of Fig. 5) for generating electrical signals from said serial data stream from said data source (column 9 lines 34-37, column 12 line 48 to column 13 line 31);

a controller (110 of Fig. 6) coupled between said data source and said transmitter for controlling said serial data stream, wherein said controller comprises:

means for storing (RAM of Fig. 7, wherein input data processed by microcontroller obviously goes through a temporary storage area) data from the serial data stream; and

means for outputting (114, 115, 117-118 of Fig. 7) the stored data to said transmitter in accordance with the desired value of data rate or data package size (column 10 lines 3-45, programmable timer for desired rate); and

a transmitter conductor array (20 of Fig. 5) for conducting said electrical signals generated by said transmitter;

wherein said second unit (200 of Figs. 5-6) comprises:

a receiving antenna (290 of Fig. 6) for tapping electrical signals in the near field of said transmitter conductor array;

a receiver (260 of Fig. 6) for receiving the signals tapped by said receiving antenna; and

a data sink (210 of Fig. 6) for subsequent processing of the signals received by said receiver.

Rider does not expressly disclose the non-contacting system being a rotary joint rotatable relative to each other; converting a data rate or data package size of said data source into a desired value of data rate or data package size; and means for storing a transmission function, which serves to adapt the desired value of data rate or data package size in a dynamic manner based on a position of the first and second units relative to each other or based on a point of time.

However, Rider teaches said data source being from a personal computer (column 9 lines 34-37, which is digital data packet) and processing/modulating said serial data stream from said data source with a default baud rate (column 10 lines 4-45, column 12 lines 55-63). And data rate/bit

rate is the product of the symbol rate (baud rate) and the number of bits encoded in each symbol. It would have been obvious to one of ordinary skill in the art to recognize that the data rate of the source of Rider does changed in the processing through the transmitter.

Meinke teaches digital-to-analog converter requiring data rate conversion between a digital information source and the converter itself (column 1 lines 12-19), which would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the data rate conversion taught by Meinke into the converters of Rider, in order to provide an interface between arrangements that operate at different rates.

Hethuin teaches adapting bit rates to relative distance between two stations (column 1 lines 15-20), which would have been obvious to one of ordinary skill in the art to incorporate Hethuin's teaching into the system of Rider and Meinke, in order maintain quality of transmission

Hoshino teaches a non-contacting rotary system having a transmitting device communicates information to a receiving device (Fig. 17, column 8 lines 24-48).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the teachings of Rider, Meinke, and Hethuin into the system of Hoshino, by application implementation preference.

Regarding claim 8, Rider, Meinke, Hethuin and Hoshino teach a method of broadband transmission of digital signals between at least one first unit and at least one second unit mobile along a predetermined path relative to said first unit, via non-contacting rotary joints as explained in response to claim 2 above.

Regarding claim 6, Rider, Meinke, Hethuin and Hoshino teach the limitation of claim 2. Rider teach further comprising a micro controller is provided for controlling or diagnosing the system (Processor of Fig. 7).

Regarding claim 7, Rider, Meinke, Hethuin and Hoshino teach the limitation of claim 1. Rider teaches wherein the system is self-learning and adapts itself dynamically to respective conditions of operation, (column 25 lines 7-40, where a tank circuit provides information for microcontroller to determine the desired operating mode for transmitter).

Regarding claims 4 and 9, Rider, Meinke, Hethuin and Hoshino teach the limitations of claims 2 and 8.
Rider, Meinke, Hethuin and Hoshino teach wherein the dynamically adapted desired value is determined by a desired-value generator according to actual transmission characteristics of a data transmission path between said transmitter and said receiver (as explained in claim 2 above, wherein distance is a transmission characteristic of the transmission path).

Regarding claim 10, Rider, Meinke, Hethuin and Hoshino teach the limitation of claim 8. Rider, Meinke, Hethuin and Hoshino teach wherein said step of controlling the serial data stream comprises supplying the desired value of data rate or data package size to said transmitter as explained in response to claim 9 above.

Regarding claim 11, Rider, Meinke, Hethuin and Hoshino teach the limitation of claim 8. Rider, Meinke, Hethuin and Hoshino teach wherein said step of controlling the serial data stream comprises storing data from the serial data stream if the desired data rate is lower than a rate at which the serial data stream is generated by the data source in said generating step (obvious because a temporary storing is needed for data rate conversion)

Regarding claim 12, Rider, Meinke, Hethuin and Hoshino teach the limitation of claim 2. Rider teaches further comprising a decoder (210 of Fig. 6, 611 of Fig. 14) coupled to or included within said receiver for converting a data rate or data package size of the signals received by said receiver into the data rate or data package size generated by said data source (decoder is inherent in receiver for decoding encoded information from transmitter).

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rider (US Patent#5264795) in view of Meinke (US4193123), Hethuin (US5712639), Hoshino (US5267033) and Marchetto et al. (US Patent#5914959).

Regarding claim 5, Rider, Meinke, Hethuin and Hoshino teach the limitation of claim 2. But, Rider, Meinke, Hethuin and Hoshino do not expressly disclose further comprising an analyzer coupled between said receiver and said data sink, wherein said analyzer is configured for signaling incorrectly transmitted data to said controller by means of an additional

transmission path, and wherein said controller is configured for repeating said incorrectly transmitted data packages upon request by said analyzer.

Marchetto et al. teach an analyzer coupled between said receiver and said data sink, wherein said analyzer is configured for signaling incorrectly transmitted data to said controller by means of an additional transmission path, and wherein said controller is configured for repeating said incorrectly transmitted data packages upon request by said analyzer (abstract, Fig. 2, column 1 line 57 to column 3 line 30).

Despite difference in wireless communication protocols, requesting retransmission for detecting error data for completing data reception would have been an obvious feature in wireless communication for one of ordinary skill in the art.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate having means for requesting retransmission taught by Machetto et al. into the device of Rider, Meinke, Hethuin and Hoshino, in order to provide resilient communication.

4. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rider (US Patent#5264795) in view of Meinke (US4193123), Hoshino (US5267033) and Davies (US2002/0109890).

Regarding claim 13, Rider, Meinke, and Hoshino teach a system for broadband transmission of digital signals between at least one first unit and at least one second unit mobile along a

predetermined path relative to said first unit, via non-contacting rotary joints, as explained in response to claim 2 above.

But, Rider, Meinke, and Hoshino do not expressly disclose wherein the transmission path is subdivided into segments, and wherein said electrical signals are conducted exclusively at positions where segments of the transmission path are present.

Davies teaches subdividing transmission path into segments, and wherein said electrical signals are conducted exclusively at positions where segments of the transmission path are present (Fig. 3), which would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate into the system of Rider, Meinke, and Hoshino, in order to provide control over transmission path.

Regarding claim 14, Rider, Meinke, Hoshino, and Davies teach the limitation of claim 13. Rider, Meinke, Hoshino, and Davies teach wherein the said second unit as explained in response to claim 2 above.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ZHIYU LU whose telephone number is (571)272-2837. The examiner can normally be reached on Weekdays: 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duc Nguyen can be reached on (571) 272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Zhiyu Lu
Primary Examiner
Art Unit 2618

/Zhiyu Lu/
Primary Examiner, Art Unit 2618
May 21, 2011